

# Farming and Wildlife

Series No. 2



## Bobwhite Quail



Missouri Department of Conservation



U.S.D.A. Soil Conservation Service



Agriculture is Missouri's #1 industry with nearly 75 percent of the state devoted to crop or forage production. Farming methods have a significant impact on soil and wildlife resources and the future of bobwhite quail is tied closely to Missouri farmland. Cropping and forage systems can be compatible with bobwhite quail and soil conservation. Understanding how farming affects quail habitat is essential before the habitat can be improved.

## Field Borders



Fields without brushy or grassy borders do not provide quail habitat. Borders protect field edges from erosion. Field borders should not be mowed annually.

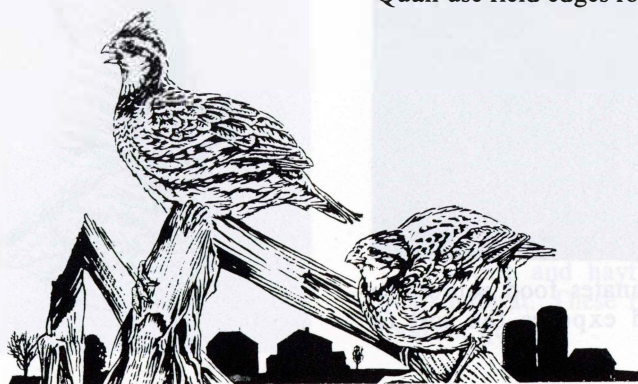
## Field Shape



Field borders are especially important to quail during the winter. Brushy field borders provide cover from winter storms. Grassy or weedy field borders are used for nesting and raising young. Borders should be maintained between fields, and between fields and wood lots.



Irregular field edges with woody draws attract quail. Quail use field edges for feeding, nesting and cover.







Fields with straight edges have less habitat for quail. Preserving woody draws is important. Woody cover in draws will reestablish naturally if left unplowed or unmowed.

### Tillage Practices



Quail eat waste grain during the winter. Conservation tillage will result in this food being available during the winter.



Fall plowing or discing eliminates food sources in the field during the winter and exposes the soil to erosion.

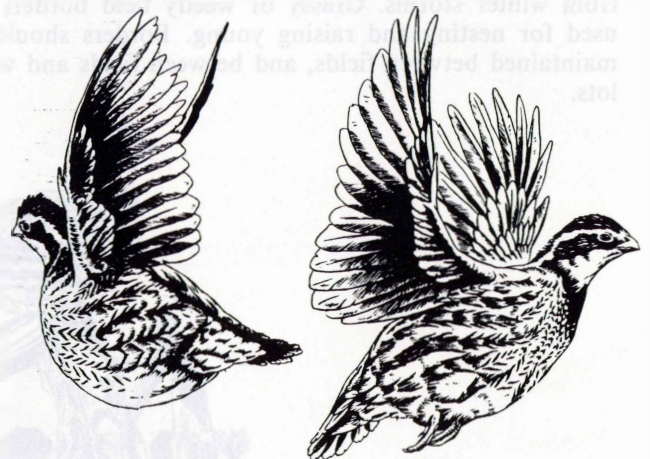
### Crop Rotation



Alternating crops in the same field is an excellent way to reduce erosion and build soil fertility. Planting row crops followed by wheat or other small grains the next year provides habitat diversity for quail. Planting legumes or grass every third or fourth year is a good rotation for soil conservation and quail.



Planting row crops year after year can deplete the soil and contribute to erosion. Quail food sources are more diverse on farms where crop rotation is a standard management practice.





## Emergency Winter Food Sources

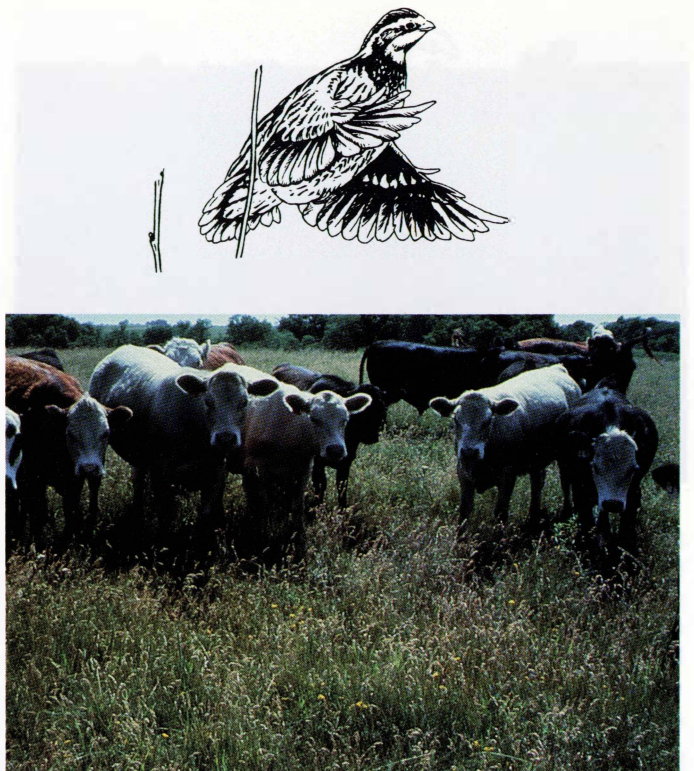


For the landowner interested in bobwhite quail, leaving a few rows of crops next to woody cover will provide an emergency winter food source when winter weather is especially severe.



There can be times during the winter when natural foods and waste grain are covered by snow. During these periods quail are vulnerable to high winds and extreme cold temperatures.

### Grass Types



Quail prefer a mixture of grasses and legumes that do not form a dense sod. Thick mats of grass hinder movement of quail and make feeding difficult. Native warm-season grasses, properly managed, provide cover and food. Mixing legumes with grasses improves habitat for young quail.



Pasture and hayfields of pure fescue produce poor quail habitat. These fields usually have little cover and food for quail.



## Forage Utilization



Cool-season grass hayfields and pastures such as fescue, timothy, brome grass and orchard grass should have 3 to 6 inches of grass height before winter. Warm-season grasses such as switchgrass, Indian grass and big bluestem should have at least 8 to 10 inches of grass height before winter. This grass height will ensure optimum forage the following spring and provide winter and nesting cover for quail.



Heavily used pastures and hayfields are rarely used by quail, especially during the winter. These fields provide little cover or food for quail and forage production may be low. Erosion can also be a problem on overgrazed fields.



## Legume Management



Establishing and managing legumes such as red clover, ladino clover or lespedeza make pastures more attractive to quail for nesting and raising young.



Hayfields and pastures without legumes have less food value for quail and livestock.



## Quail Foods



Quail eat the seeds from weedy plants and agricultural crops. Ragweed and lespedeza are favorite quail foods. Pastures, idle areas and field borders with several kinds of annual weeds will attract quail.



Field borders, idle areas and pastures composed primarily of grass without annual weedy plants can be poor quail feeding sites.



## Nesting Cover



Quail prefer to nest in grass areas. Grass waterways can be good nesting sites and places to raise young if left unmowed until after July 1. Grassy field borders also should not be mowed before July 1.



Mowing waterways before July 1 or after August 1 destroys quail nesting and feeding habitat. If waterways or grass field borders must be mowed after August 1, then mowing height should be at least 8 inches to provide enough grass cover for nesting in the spring.



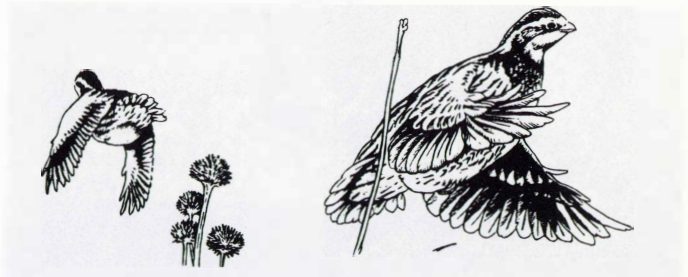
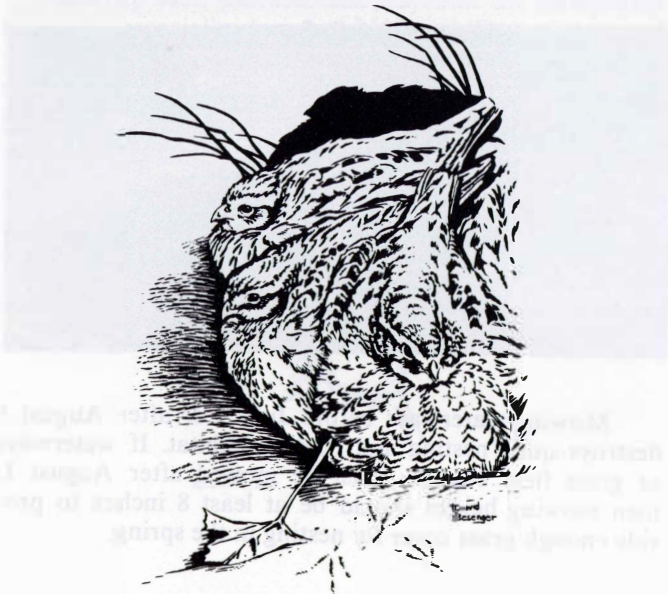
## Wood Lot Management



Quail use wood lots for feeding and cover. They prefer wood lots with thick brushy understory.



Wood lots with little understory because of grazing or shading from trees do not provide cover and food for quail. Excluding livestock and thinning trees will improve habitat conditions.



## Winter Cover



Brushy draws and thickets in crop fields and hay-fields are ideal winter cover for quail because they provide shelter close to food.



Large crop fields or grass fields (greater than 20 acres) without woody draws or brushy cover are not used by quail during the winter. Waste grain or standing rows of grain in large fields are not used by quail during the winter if woody draws or brushy cover are absent.



## Location of Winter Cover



Ideally, fields should have brushy draws, wood lots or woody fence rows on all sides so quail can make complete use of food in the field.



Brushy draws, wood lots or fence rows located on one side of the field are less desirable for quail. Food sources not close to cover may not be used during the winter.



## Idle Areas



Fenced ponds and abandoned buildings make excellent cover, nesting and feeding areas for quail.



Grazed ponds are not used by quail for winter cover or nesting. These ponds may also have a shortened life because of erosion.



## Arrangement of Quail Habitat



Quail like small fields of grass and crops (less than 20 acres) surrounded by brushy draws, dense brushy cover or wood lots. Fields less than 600 feet across (2 football field lengths) make good quail habitat.



Farms with large crop and grass fields support fewer quail. The amount of edge between fields and fence rows, wood lots or brushy areas is reduced and winter cover is too widely spaced.



Quail use wood lots for winter cover, but areas of the state with large amounts of forest do not make good quail habitat. Wood lots mixed with crop, grass and idle areas provide maximum edge and the most quail.



Wood lots greater than 40 acres have too little edge with crop and grass fields. Deer, turkey and squirrels prefer large tracts of forest, but not quail.



You can determine how your farm rates as bobwhite quail habitat by answering the following 14 questions yes or no. Refer to the pictures if you are unsure how to answer a question.

Yes No

- Are most of your fields surrounded by brushy or woody borders? — —
- Do you have brushy draws in your fields? — —
- Do you use conservation tillage practices such as no-till or chisel plowing? — —
- Do you plant row crops, small grains and legumes or grass in cropfields (crop rotation) on successive years? — —
- Do you leave a few rows of standing crops? — —
- Are your grass fields planted with several kinds of grass? — —
- Do you have 3 to 6 inches of grass height during the winter in cool-season grass pastures and hayfields? — —
- Do you maintain legumes in your grass fields? — —
- Do your grass fields, field borders or idle areas have several different kinds of annual weedy plants? — —
- Do you mow waterways and grass field borders after July 1 or before August 1? — —
- Are your wood lots protected from grazing? — —
- Are most of your fields less than 20 acres with brushy draws or surrounded by woody fence rows? — —

Do you have small idle areas, fenced ponds or abandoned building sites? — —

Does your land have a mixture of cropland, grassland and woodland? — —

If you answered yes to 12 or more of these questions then your farm may be good to excellent habitat for quail. If you answered six or less questions yes, your farm may have few quail and quail may be lost during the more severe winters. Farming and wildlife habitat can be compatible. Generally, the more diverse your farming operation the better the quail habitat. Farms with cropfields, pastures, hayfields and wood lots support more quail and maintain those quail during tougher winters than farms composed mostly of cropland or grassland or woodland.

The Department of Conservation will provide help to Missouri landowners on wildlife habitat management. There are 12 wildlife service biologists located throughout the state who will visit your land and assist you with management plans for quail and other wildlife. You can also contact your local conservation agent for assistance.

For more information on farm practices that will benefit quail and protect the soil, contact the U.S.D.A. Soil Conservation Service office in your county. Ask for a conservation farm plan so that you can have a complete assessment of your soil, wildlife and forest resources. You can even ask for a detailed appraisal of bobwhite quail habitat on your farm. Both the U.S.D.A. Soil Conservation Service and Missouri Department of Conservation will assist you in making your farm good habitat for bobwhite quail.

